1

G. R. S. IX-5]

Previous references.

File No. 19-B.

1915-16.

(Edn.)

Serial Nos. 19, 56, 70, 107.

Later references.

Edn 123-19-38

GENERAL AND REVENUE SECRETARIAT.

P

Serial Nos. 19, 56, 70 & 107.

Part B for December, 1916.

SUBJECT.

Inspection Report of the Mechanical Engineering School Bangalore and Chamarajendra Technical Institute, Mysore by a Special Committee.

107. To the I.G. of Edn. Ch. Engineer. Dir of I & C. Loco & Carriage Supt. Sa' Ex. Conference no. 4620-6. of 14.12.1916.

Reviews the Report on the Technical Institutions at Bangalore and Mysore submitted by a Special Committee appointed for the purpose.

W D 68—GPB—50,000—21-7-16

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G. R. S. 11] 1915.

GENERAL AND REVENUE SECRETARIAT.

(Edn)

NOTES.

File No. 19

FILE HEADING.

Technical Institutions.

From

The chief Engr.

No. 9615 Dated 2.10.15 Received 24.10.15th

Diary No. 1360 | Enclos. 1 file Spare Copies. — | Serial No. 19

BRIEF ABSTRACT OF LETTER.

Submits a report of the committee appointed to inspect the Chamarajendra Tech. Inst., Mysore, and the Mech. Engg. School, Bangalore.

NOTES AND ORDERS.

The committee was appointed in G.O. no. 3424-27/Edn. 17-14 of 15.3.15, and the members are messrs M. Shama Rao, A. Chatterton, R.E. Berry and Karpur Shinivasarav.

NOTES—First Sheet.

GPB—20,000—8-8-14

F. R. S. 12]

General and Revenue Secretariat. | Edu File No. 19 of 1915.

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2 Regarding the Mechanical Engineering School the Committee propose that though lectures by outside gentlemen may have ~~its~~ their own value it is desirable to make the teaching complete by appointing two more members, one a well-trained workshop-foreman & the other a practical technical teacher.

3 As regards the Chem. Tech. Inst., it is noted that the Engineering section of the Inst. is under revision. In the Technical section when the full course of 5 years is begun (now only 3 yrs.) additional staff is said to be required.

4 The ~~ma~~ functions of the managing Committee are proposed to be revised after the appt. of a qualified Supt. Now that Mr. Alderton has taken charge of his appt. as Supt. of the Inst. this question of functions may perhaps be repd. to the Dy. of Edu. for opinion.

~~It has been pointed out that there is no lecture theatre in the Inst. and that there is no light in the fine arts section.~~

5 The Committee speaks favorably of the work of the commercial section also.

NOTE—Contn. sheet.

GPB—20,000—30-6-15.

General and Revenue Secretariat. | Edu File No. 19 of 1915.

Serial No. 16

Mr. Chatterton does not agree with the observations of the other members and he has sent a separate note of his own pointing out—

(1) that there is no lecture-theatre in the C.T.I.

(2) that lighting arrangements are necessary in the fine arts section of the Inst.

(3) that supervision of the work of maistris is necessary

(4) the wood-carving & inlaying work is not satisfactory

(5) that a timber-yard for stocking seasoned wood is a necessity

(6) that there should be a man on the staff of the Inst. who is competent to design modern cabinet work

(7) that good tools should be supplied to the students

& (8) that the smiths & fitter's work is not also satisfactory.

7 He goes on to say that in the Mech. Engr. School ~~carpentry, and~~ the teaching of Physics & chemistry may be abolished, and that arrangements for training in

NOTE—Contn. sheet.

GPB—20,000—30-6-15.

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4

J. R. S. 12]

General and Revenue Secretariat. | Edu File No. 19 of 1915.

Serial No.

workshop course after the boys leave the school should also be provided for.

8 Submd. for orders with refces.

8/9. 9 Put up a draft recording
29.10.15. the reports & the minute of direct,
by & forwarding the reports & the note
to the Director of Education for suitable
& necessary action & requesting the Sub
Committee to inspect these institutions
in April 1916 & to submit a
similar report to us supplied
the Chief Engineer. by 30/10

10 Submd. with a draft G.O.

8/9. 11 Approved.
3.11.15
4 by Sec. by 4/11

12 I kept this file some time
with me to study how
far the distribution now given
in the two institutions referred
to is in accordance with
the original scheme and
though the courses of
instruction more or less
follow the lines laid down

Schedule ?

NOTE—Contn. sheet.

GPB—20,000—30-6-15

Serial No.

there is no doubt great scope for much improvement all round.

13 Both the technical institutions have only been in existence for a short time and as admitted by Mr Chatterton himself it is too early for them to become thoroughly efficient. There is a good deal of destructive criticism in Mr Chatterton's report and some of it is partly due to a difference of opinion as to the general detail of the scheme itself but there is no doubt that many of the suggestions are of great value.

14 As soon as the P. W. workshop of the Railway workshop are thoroughly equipped the pupils of these institutions will have an unequalled opportunity almost anywhere in India

Serial No.

for sound practical training especially as we have the electrical workshops in addition as suggested by the Chief Engineer I think the same committee may be requested to meet once more and consider what improvements are possible having regard to the experience now acquired of the facilities recently provided.

15 There is no doubt that it is very necessary as proposed by Mr. Chatterton to develop the training of workmen in addition to training of men for higher lines of work.

16 Let the committee in the place of Mr. Berry I think we may put in Mr. Ranganathan Supt. Engineer

L S
T. 31.

1st Member
Secy } 17

B
21/12/15

I am inclined

G. R. S. 12]

General and Revenue Secretariat.

Edu File No. 19 of 1915

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to think that the criticisms of Mr. Chatterton deserve close attention; and they should be taken into account after the next inspection now ordered. On some of the points, he appears more convincing than the ~~oth~~ general report of the Committee.

18 I have amended the draft a little & approved it.

18/1/16

19 Please put up a clean draft before submitting to Govn

A
19/1/

20 A clean draft is put up. The time for the second inspection of the institutions and for the submission of the report of the second inspection have to be specified in the draft with due regard to the probable date of the issue of the present draft.

DOM
P.70

8/2. Pd
20.1.16

NOTE—Contn. sheet.

GPB—20,000—30-6-15

1360
3989

G. R. S. 12]

General and Revenue Secretariat. | Education File No. 19 of 1915

Serial No.

21
Dewan)

Kindly see
20/1

3754
21.1.16

Please see the Dewan's order on the draft order.

C.R.
22.2.16.

23 noted
23/2

26 G.O. 4622-5. dated 19-15-56. dt 13.3.16.
Revision Perusal the Report of the Committee on the inspection of the Chamarajendra Technical Institute, Mysore, & Mechanical Engineering School & direct that both of them should be inspected & a report submitted by the end of April 1916.
From. The Chief Engineer Mysore.

27 Letter No. 13. dt. 13.4.16 —
States that the Chamarajendra Technical Institute, Mysore, is closed for the summer vacation from the 8th. april to 8th. may & that therefore the report on the working of the two institutions referred to above will be sent at the end of May.

24 ~~Submit~~ Submit ~~the order~~ —
~~The 26~~ The report referred to in the letter is to be awaited. Submitted for orders.
2.5.16.

25 A reminder may issue on the 15th. instant perhaps
25/5/16

26 C.R. 4/5

NOTE—Contn. sheet.

Can

GPB—20,000—30-6-15

10
2

3969

ISSUED
FOR FURTHER ACTION

G. R. S. 12]

General and Revenue Secretariat.

File No. 19 of 191 .

Serial No.

From the Dy. of Edn. No. 20190/835 dt 7-4-16.

With ref. to 56, above, requests that the Committee's Inspection Report on the Chamarajendra Technical Institute, and the enclosures relating to the lists of inside and outside lectures & subject of the Mechanical Engineering School, Bangalore, may be sent.

27 As there is only one copy of each of these in the file, a draft forwarding copies of them is subd. for approval

SA 5/5/16 5/5/16

28 [illegible] 6/5

[illegible] 27/5/16

29 As the report promised by the end of May has not yet been received a draft rem. is subd. up.

SA 14.6.16 [illegible] 14/6/16

30 [illegible] 17/6

Rec'd 14.6.16

To the Chf. Engr 7407 dt 21.6.16

Requests that the submn. of the report may be expedited.

From ditto 6378 dt 30.6.16 recd. 4.7.16.

States that the two instns were inspected by the Committee on the 2nd & 16th June 1916 and that the report will be submd. shortly

NOTE—Contn. sheet

78

G. R. S. 12]

General and Revenue Secretariat. | File No. 15 of 1915.

Serial No.

on receipt of infn. called for from myore.

31 The receipt of the report may be awaited.

8/7. 32

4.7.16 This may in the meantime be submitted to the First Member for information also. As he has been calling for information

10/7/16

First Member

160
6.7.16

Please note temporarily

33 Noted 5/7

34 Awaited. Please put up when recd. 11/7

4/8

Can wait for Myore's reply. Meanwhile put up when recd. 8/7

35 As the ~~infn.~~ report has not yet been received a draft remr. is proposed.

8/7. 9.8.16 10/8/16

36 Done accordingly 5/8

Remr. issued. 1341 & 12.8.16.

37 Another draft remr. is proposed.

8/7.

26.8.16. 26/8/16

38 Done 6/8

From the chf. engr. 8875 & 25.8.16 recd. 28.8.16 states that the notes will be sent shortly.

39 Reminder not issued.

The notes are being prepared. 30/8/16

From the chf. engr. 9146 & 30.8.16 received 2.9.16.

NOTE—Contn. sheet.

12

11

1208

G. R. S. 12]

General and Revenue Secretariat.

Edn. File No. 19 of 1915.

Serial No.

Submits two reports of the Committee, one on the Insp.n of the Chaum. Tech. Inst. Mysore, & the other about the Insp.n of the Mechanical Engineering School, Bangalore.

40 The recommendations of the Committee are summarized at the end of the report.

41 Separate proposals have been received from the D.S. of Edn. for revising the Industries & Crafts Section, etc. of the C.T. Inst. and also the Mech. Eng.g School. In regard to the C.T. Inst. the D.S. has been asked to submit comprehensive proposals and his reply is yet due from him. The papers about the Mechanical Engineering School have been submd. to Dewan on 22. 8. 1916.

(L 911)

42 Submitted for orders.

8/9 4-9-16

43 The two files which are merely these reports may be clearly with at mle. Please put up this file re 1. 4/9

44 Submd. with the file. A reminder is to issue in that case. 5/9

8/9 5. 9. 16.

45 Issue reminder & put up. 5/9

NOTE—Contn. sheet.

G. R. S. 12]

General and Revenue Secretariat. | Edu. File No. 19 of 1915.

Serial No.

46 A reminder has been issued in the linked file.

47) Submd. as directed.

7.9.16

Submd.

Rem. issued in the other case; and the files submd. as directed.

20.10.16.

Submitted.

20/10/16

(1) I think this expert should be received & (2) the Demonstrator & the Instructor teacher for the Mysore Chamarajendra Institute have also sanctioned & (3) the proposals already under consideration for running the Mechanical Engg. School have conformed with the recommendations of the Committee & orders to come — [illegible] 21/10/16

Please [illegible] Pt. II

10.16

A off. review is also put up.

23.10.16

Please [illegible] a punctual [illegible]

24/10/16

NOTE—Contn. sheet.

GPB—70,000—17-12-15

14 D

G. R. S. 12]

General and Revenue Secretariat. | Edn File No. 19 of 1915.

Serial No.

Fair draft submd.

Dy. 30/10/16 SC Rw. approval

Not in this [illegible] 26.10.16

Sey

Dy 30/10/16

5 Draft may be app

The question of improving both the Chemical and Technical Institute and the Mechanical Engineering School is most urgent but nothing can be done until proposals are received from the I. P. E. I would suggest that the Fin. Secy, the I. P. E and myself may meet together and discuss all the requirements and send up proposals. Otherwise I am afraid that the provision that was made with great difficulty will not be adequate

Dewan Bahadur
Fin Secy Edn

Fi 5/11/16

52 I agree.

3227 14.12.16

NOTE—Contn. sheet.

1/12

1/12 Fu 4/12

3227

1208

14
15

G. R. S. 12]

General and Revenue Secretariat. | File No. | of 191 .

Serial No.

53 Draft appd by Hon D Ewan
11-12-16

Fwd 54 issue
12/12

107. To the Sy. of Gov. Ch: Engineer. Dir. of Ind. Lowa & Carriage Dept. Sec. Ev. Com.
no. 4622-6. d. 14.12.916.
Reviews the Report on the Technical Institutions at Bangalore & Mysore, Submitted by a Special Committee appointed for the purpose.

NOTE—Contn. sheet.

GPB—70,000—17-12-15

TELEGRAPHIC ADDRESS: *Statewoks.*

No. 9615

D: 1360

16

1919

SECTION

MYSORE P. W. DEPARTMENT.

CENTRAL OFFICE

Bangalore....2nd October....*191* 5.

From

KARPUR SHRINIVASRAO, ESQ., B.SC., L.C.E.,

Chief Engineer of Mysore,

Bangalore.

To

P.G.D'Souza, Esq., B.A., B.L.,

Secretary to Government,

Departments of Education & Agriculture,

Bangalore.

Sir,

Agreeably to the Government order No.3424-27/Edn.17-14 dated the 15th March 1915, I herewith submit a report of the Committee consisting of the marginally noted members who inspected the Chamarajendra Technical Institute, Mysore, and the Mechanical Engineering School, Bangalore, in April last. The two reports give all the necessary information, and considering that both the Institutions are more or less in their infancy, the work already done in them is not unsatisfactory.

(1) Rao Bahadur Mr.M.Shama Rao, M.A.
(2) Mr.Alfred Chatterton, C.I.E.
(3) Mr.R.E.Barry, M.I.M.E.,
(4) Mr.Karpur Shrinivasrao, B.Sc., L.C.E.

2. Mr.Chatterton, however, though agreeing generally with the report, has submitted a separate note for consideration. In this note, Mr.Chatterton distinctly admits that as both the institutions have only been recently started, "it would be impossible that they should be as efficient educational institutions

as it is necessary that they should ultimately become". With this admission much of the criticism of Mr.Chatterton mainly directed to small matters of defects does not receive any special notice.

3. Mr.Chatterton wanted another meeting to consider the points in his note. But both Mr.Shama Rao and myself are of opinion that such a meeting is not necessary for the present

4. As the Mechanical Engineering School in Bangalore is being improved by providing additional accommodation, &c., and as a special Superintendent imported from England has been recently appointed for the Technical Institute at Mysore, I beg to propose that the same Committee may be permitted to inspect these institutions again some time in January or February next, after the Mechanical Engineering School buildings are completed and after the new Superintendent of the Mysore Technical Institute has had some experience of the work of the Institution.

5. Meanwhile, I suggest that the Committee's report as well as the note of Mr.Chatterton may be forwarded to the Education Department for suitable and necessary action.

I have the honour to be,

Sir,

Your most obedient servant,

Enclosures
1 Report on the Mechc: Engrg Schl: Bangalore
1 " Engrg: Schl: Mysore
1 Do Comp No: 3. by Mr: Chatterton &
ils 2 Encs.

Chief Engineer of Mysore.

V.N.S.

Committees' report on their Inspection of the Mechanical Engineering school at Bangalore.

----------0----------

Agreeably to Government Order No. 3424-27/Ex.17-14- dated 15th March 1915 the Mechanical Engineering School in Bangalore was inspected on 28th April 1915 by a Committee consisting of the marginally noted officers and the work done in the School both in the theoretical and practical branches was shown to the Committee by the Superintendent Mr.S.V.Setti and his assistants. Mr.V.Rangaswami Iyengar Superintending Engineer, Southern Circle, and member of the Managing Board of the School, was also present on the occasion.

1 Mr.M.Shama Row, M.A.,
2 " Alfred Chatterton, C.I.E.,
3 " R.E.Bury, M.I.M.E.,
4 " Karpur Shrinivasrao, B.Sc., L.C.E.

The institute provides instruction both in theory and practice in the following subjects:-

1. Management and care of steam engines.
2. Management and care of erection of machinery and mill work.
3. Electrical work including operating.
4. Care and driving of motor cars and
5. Carpentry including cabinet making.

2. Besides these, there are also classes for training -

i. Teachers for Industrial Schools.

ii. P.W.Inspectors. and

iii. Telegraph Signallers.

3. There are in all 120 students in the Institution and they are distributed among the several classes and branches of studies under the courses for different years as shown in the accompanying tabular statement which speaks for itself. It would be seen that there are 56 scholarship holders, 52 free students and 12 paying students.

4. The number of students is greatest (21) in machinery and mill work class and least (5) in carpentry and cabinet making class. Probably the existence of so many carpenters' workshops in the City, where apprentices are trained in the old ways, accounts for the small number of students in the carpentry class. There are 16 students in the Industrial School teachers' class, 14 in P.W.Inspectors' class, and 11 in the Telegraph Signallers' class. Nearly all the (9) casual students are learning motor car driving and only one is learning steam and oil engine driving as he wants to start a rice mill.

5. As the Institution is only two years old the number of students in the different branches may be said to be satisfactory and as this number is likely to be doubled very soon when the full course of studies for all the 4 years comes into operation it is necessary to increase the accommodation and staff as will be subsequently shown.

6. The teaching in the school under the five branches is based upon a complete and comprehensive

scheme prepared by a special Committee appointed by Government and this was accepted by Government after a careful scrutiny by the Education Committee of the Economic Conference. This scheme was slightly modified for want of accommodation both in the workshops and school room and the actual work in the institution is based upon detailed syllabus under different branches ~~as per attached statements.~~

7. It will be observed ~~from the syllabus~~ that as far as the time and limiting conditions of the institution permit, an attempt has been made to combine both practical and theoretical training in the institution and special care is taken that the practical training should largely predominate under each branch. In fact, generally during the whole course the students receive about 1,700 hours of theoretical training against 3,600 hours of workshop practice showing the great attention given to practical training in the institution. Thus while so much importance is given to the practical training, the theoretical side which is so very necessary to secure success in all such undertaking has not been altogether neglected.

8. It is true that as the time at the disposal of the institution is limited as much as is desirable cannot be done by way of introducing a more thorough or perfect theoretical course. This alone cannot be any justification for altogether neglecting or omitting the theoretical studies. Mr.Chatterton however is of opinion that much of the theoretical work can be

either omitted altogether from the curriculum of this institution or only such students as have already had the necessary training in other institutions specially meant for the purpose should be admitted into this institution.

9. The other members of the Committee differ from this view for obvious reasons. It is impossible in any system of training to altogether separate the theoretical from the practical side and as the students admitted to the institution will not have all of them completed the full high school course, some supplemental theoretical training in this institution becomes very necessary. If we are to restrict the admission to only passed men from high schools the object of the institution will be to some extent defeated. Students passing from high schools generally prefer to go to Colleges for higher studies and very few of them would care to join this institution. As a matter of fact the main object of the institution is to divert the students when they are comparatively young from purely literary studies and in this light it is essential that while sufficient attention is given to train such comparatively young and undeveloped students in practical arts and industries the allied theoretical knowledge, without which the practical skill however expert must remain more or less limited, should not be neglected.

10. In fact, without such theoretical training the so called practical man will not be able to form

a proper estimate of his requirements or to look forward for improvements in the mode of his work according to future requirements as he advances in his profession. The mathematical subjects such as Arithmetic, Algebra and Mensuration serve the former and so far as they are taught in the institution, while the theoretical subjects like Physics and Chemistry, so far as they are allied to practical arts, serve the latter.

11. Viewed in this light, the curriculum now in force does not require any material modification although it may with some advantage be slightly altered here and there in minor matters. The School Committee will make any alterations they think proper in the detailed curriculum of studies in the light of these remarks.

12. The work turned out by the students in the several classes of the several branches was carefully examined by the Committee and they are pleased to record that so far as it goes the quality of work turned out reflects credit on the staff of the institution and the methods of teaching adopted. The work of the P.W.Inspectors class and Industrial School teachers' class was also examined and here too the progress was found to be statisfactory.

13. There are some casual students attending the institution just to pick up the knowledge they want with a special course of a few months, and some of these appear to be smart and attentive to their work.

This class of students really represents the ready artisan wishing to acquire further useful knowledge and it is desirable that such students should be further encouraged to join the institution.

14. It may be represented that there is great want of accommodation to suit the present and the immediate future requirements of the institution. But already there are few extra blocks under construction which would go to remedy this defect to some extent and further suitable accommodation may still be required.

15. Many of the students have already completed their preliminary training and they have to be provided with facilities for workshop practice before long. It is understood that a scheme has already been submitted to the Government in the Public Works Department to develop the Workshop at Bangalore and this when sanctioned will afford further facilities to the students of this institution.

16. The teaching staff consists of Mr.Setti helped by three Assistants and three or 4 Artisans. Considering the various branches in which practical and theoretical training is aimed to be given in this institution it has been found necessary to supplement the permanent teaching staff by seeking the help of outside gentlemen as shown in the list. Although such teaching by outsiders may have its own value it is very desirable that an institution of this sort should be more or less complete, and self contained as this would be the only

Slip.

way by which steady and continuous progress may be secured in definite and properly chalked out lines of studies. With this view the Committee recommend that the teaching staff should be strengthened by at least two more members, one of these may be well trained workshop foreman and the other a practical technical teacher. Also the necessary artisans to teach practical work in different branches may be increased to some extent.

17. On the whole the Committee are pleased to record their opinion that the work of the institution is being conducted on sound and practical lines and they can strongly recommend the adoption of the measures proposed in paras 14 to 16 above, to extend the scope and object of the institution still further as far as practicable.

Permanent Lecturers of the Mechanical Engineering School at Bangalore.

++ ++

Names of lecturers.	Subject.
1. Mr.S.V.Setti	Electrical Engineering and Steam and the Steam Engines.
2. " R.Ramachandra Row	Estimating and Elements of Mechanism.
3. " S.B.Krishnamurti Row	Arithmetic, Algebra, Geometry, Mensuration, Miscellaneous, Chemistry and Physics.
4. " A.N.Ragganathan	Freehand drawing, Geometrical and Machine Drawing.

Outside lecturers of the Mechanical Engineering School at Bangalore.

++ ++

Names of Lecturers.	Subjects.
1. Mr.V.Rangaswami Iyengar.	Internal Combustion Engines.
2. " K.Srinivasaiengar.	Machinery and Mill work.
3. " M.G.Rangaiya	Hydraulic Machinery.
4. " Padmanabha Row.	Electrical Engineering.
5. " Y.S.Kesava Row	Materials of Construction.
6. " Lakshminarasimhayya.	Applied Mechanics.
7. " Narasimha Iyer.	Steam & Oil Engines. Applied Mechanics. Elements of Mechanism.
8. " K.R.Venkatasubbachar.	-do- -do- -do-

	I. Steam and Oil Engines				II. Machinery and Mill Work				III. Electric Engineering & Operating				IV. Motor Car Engineering				V. Carpentry				Indian Section Teachers Class				Permanent Way Inspectors Class				Telegraph Class				Casual Students varying from 3 to 12 weeks				Total			
	Scholarship holders	Ordinary	Paying	Total.	S	O	P	T	S	O	P	T	S	O	P	T	S	O	P	T	S	O	P	T	S	O	P	T	S	O	P	T	S	O	P	T	Scholars.	Ordinary	Paying	Total.
First Year	6	2	1	9	6	4	1	11	3	3	-	6	2	2	-	4	3	2	-	5	-	16	-	16	12	2	-	14	-	-	-	-		IV 9 V 1	2	10	32	31	12	75
Second Year	8	3	-	11	7	3	-	10	3	6	-	9	2	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	4 (Second batch)	7	-	11	-	-	-	-	24	21	-	45
Third Year						—								Nil	-													Nil	-						—				—	
Fourth Year.						—								Nil														Nil		—					—				—	
Total.	14	5	1	20	13	7	1	21	6	9	-	15	4	4	-	8	3	2	-	5	-	16	-	16	12	2	-	14	4	7	-	11	-	-	10	10	56	52	12	120

8/6/15

Report of the committee appointed as per Government Order No.3424-27/E.D.N.17-14. dated the 15th March 1915 on their inspection of the Technical Institute, Mysore, on the 16th and 17th April 1915.

++ ++ ++ ++ ++

Agreeably to Government Order No.3424-27/Edn.17-14 dated the 15th March 1915, a committe consisting of the marginally noted gentlemen ---

Mr. M.Shama Rao, M.A. " Alfred Chatterton, C.I.E. " R.E. Bury, ~~M.I.E.E.~~ M.I.Mech E., " Kanpur Shrinivasa, B.Sc., I.C.S.	inspected the Chamarajendra Technical Institute, Mysore, on 16th and 17th April 1915.

2. Mr.Sreenivasa Iyer, the acting Head Master of the institution, Mr.Ramachendra Rao, Superintendent, Technical section, and Mr. Subba Rao in charge of the Commercial section explained the work done in the institution.

3. The institution consists of three branches:

(1) The Engineering school section.

(2) The Technical school section.

(3) Commercial school section.

4. In the Engineering school, there are two branches, the Sub-Overseers' class and the Sheikdars' Class, the course for the former being two years and that for the latter being only one year. There are in all 97 students, 31 in the first year Sub-Overseers' Class, 31 in the second year and 35 in the Sheikdars' Class.

5. Mr.Sreenivasa Iyer, a lent Assistant Engineer, from the Public Works Department, is the Head Master of the Engineering School, being also in general charge of the whole Institution, is helped by four Assistants for the work in the Engineering section. The results of this section are considered very good as testified by the practical efficiency of the past students who are most of them absorbed in the Public Works and Railway Departments. This branch of the section was not examined in detail by the Committee as indeed no special suggestions or modifications appeared necessary in connection with this branch.

6. The second or the technical section forms the most important feature of this school and instruction is given more or less in accordance with a comprehensive syllabus. It will be seen that it is proposed to give instructions, both theoretical and practical, in the following branches:-

1. Cabinet making.
2. Smithy & Fitter's work test.
3. Sheet metal work.
4. Rattan & furniture& basket making.
5. Wood carving.
6. Inlaying.
7. Engraving.

8. Fine arts:-
   (a) Portrait painting.
   (b) Decorative art screen painting and book illustration.
   (c) Modelling.

7. Under each of these heads, special care is

taken to give the training both theoretically and practically so as to combine -

(a) General education.

(b) Mathematical drawing.
(c). Artists' Work.
(d) Industrial training.

As the students admitted are generally young, and are not equipped with school education, the general training given in this institution aims at giving the elements of the three Rs to the students so as to develop their general faculties side by side with the technical education. The mathematical drawing with elements in mensuration is considered necessary to train the students in accurate methods; while under the arts' training, subjects such as, freehand drawing, general designs and arrangements of the parts are taught. Under the industrial training, the subjects which are necessary to give a practical turn to the work of the students are included under each branch.

8. There are in all 192 students in the institution under 11 sections. Of these, the last three sections comprise workshop apprentice course for carpentry, machine work and rattan work and has got in all ten students.

9. As yet the teaching has been confined to three years' course in the several branches, but when the full course of five years comes into operation, there will be a larger number of students. Naturally some more assistants to take the

new classes may be necessary. This matter will be duly considered by the Managing Board of the School, and the necessary establishment will no doubt be asked for when the actual time comes.

10. The work done under the practical part of each of the 11 branches of the school was carefully examined by the Committee and they are generally satisfied with the results produced and the mode of instruction. The curriculum is generally based on that prescribed for the Government Technical Examinations in Madras, and judging from the results of such examinations, the teaching in the institution appears to be efficient. The management of the school is under Mr.Ramachandra Row assisted by several assistants and artisans and the teaching both in the theoretical and practical side in this branch has proved to be efficient as judged from the results.

11. The third or the commercial section comprises two branches, the vernacular section and the English section. The subjects taught in the English branch and the number of students in each are as shown below:-

1.	Commercial Practice & Office Routine	25
2	-do- Geography -- -- -- --	25
3.	Book-keeping -- -- -- -- --	56
4.	Shorthand -- -- -- -- -- --	51
5.	Typewriting -- -- -- -- --	68

The School is in its infancy and the progress already shown is creditable. The Head Master of

this section is a Graduate (B.A.) and has also had special training in Bombay in higher commercial studies. It was suggested that the accounts section of the Institution may be distributed among the more advanced students of the Institution to give them good practice in practical commercial accounts.

12. On the whole, the work ~~kmmmd~~ turned out in the Institution in all the branches, Engineering, Technical and Commercial have been found to be satisfactory. There is, however, one great want to enable the school to be even more successful. A specially trained Superintendent is necessary to take charge of the Technical Section. When this officer is appointed, the Engineering School can be made independent as was the case before. It appears the appointment of the Superintendent has already been receiving the attention in the Education Department and it is hoped that a really good man worthy of the Institution will be appointed before long. In this event, the functions of the present Managing Committee will have to be consideraly revised. This question will no doubt be taken in the Education Department.

++

Report of the Committee appointed to inspect the Tech. Inst.

33

G.R.S. 28]

File No.

Serial No.

Diary No. of letter replied to

Proceedings of the Government of His Highness the Maharaja of Mysore

GENERAL AND REVENUE SECRETARIAT.

( )

, the 191 .

Date of issue

Signed by

READ— Paragraph 7 of G.O. no. 8834-40/Edn. 462-09-24 & 1.5.13 sanctioning the organization of the Chem. Tech. Inst., Mysore, and the opening of the ~~Schools of~~ Mechanical Engineering and Commercial Schools at Bangalore.

~~ORDER THEREON. No.~~

2. G.O. no. 3424-27/Edn. 17-14-36 & 15. 3. 15 appointing a committee consisting of the Dir. of I. & c.,

over.

SUBJECT.

GPB—50,600—1-12-12

the chf. Engr., the Dy. of Edn. and the Loco + Carriage Supt. of the Mysore State Railways + Tramways, to inspect the institutions refd. to in the G.O. read above, for examining how far each of them has been working efficiently and fulfilling the objects for which it was started.

3. Letter no. 9615 of 2.10.15 from the chf. Engr. of Mysore, submitting the reports of the Committee on the inspection of the institutions with copy of a dissenting note by the Director of I. + C., and stating that the reports and the note may be sent to the Education Dept. for suitable action, and proposing that the same Committee may be permitted to inspect the institutions again in Jan.y or Feb.y next after the buildings of the Mech. Eng.g School are completed and after the new Supt. of the Mysore Tech. Inst. has had some experience of the work of the Inst.

G.R.S. 27]

GENERAL AND REVENUE SECRETARIAT.

(Continuation sheet draft form.)

~~1. The Members of the Committee have taken considerable trouble to make their report as full~~

Government have perused the report of ~~and~~ the Committee and the note of Mr. Chatterton with great interest, and are satisfied that work has been carried on in both the institutions with a fair degree of success according to the prescribed scheme. ~~Mr Chatterton's~~ The director of Industries has drawn attention to various drawbacks which should receive attention.

Order

~~Recorded~~.

2. The present committee ~~with~~ is requested to ~~examine~~ inspect the institutions again in the month of February 1916 and to submit a further report in the matter by the end of April 1916.

3. The copies of the reports now submitted by the Committee and of the dissenting note by the Dr. of I. & C., are forwarded to the D.S. of Edn. for ~~suitable~~ needful action. They may be printed and kept on record for future reference.

Sect. to G. & A.

To the D.S. of Edn. 4/11/15

" Chf. Engr.

" Dr. of I. & C.

" Doco & carriage Supt. of Mysore State Railways.

G.R.S. 28]

Report of the committee appointed to inspect the technical insts.

clean draft

Edn. File No. 19-15.

Serial No. 56

Diary No. of letter replied to

Proceedings of the Government of His Highness the Maharaja of Mysore

GENERAL AND REVENUE SECRETARIAT.

( )

, the 191 .

Date of issue 13-3-16.

Signed by Sri K. Subba Rao

READ—

Paragraph 7 of G.O. no. 8834-40/Edn 462-09-24 of 1.5.1913 sanctioning the organization of the Chem. Tech. Inst., Mysore, and the opening of the Mechanical Engineering and Commercial Schools at Bangalore.

~~ORDER THEREON.~~ No.

2. G.O. no. 3424-27/Edn 17-14-36 of 15.3.15 appointing a committee consisting of the Dir. of I.&C.,

over.

SUBJECT.

the Chf. Engr., the Dy. of Edn. and the Loco + Carriage Supt. of the Mysore State Railways and Tramways, to inspect the institutions refd. to in the G.O. read above, for examining how far each of them has been working efficiently and fulfilling the objects for which it was started.

3. Letter no. 96/5 of 2.10.15 from the Chf. Engr. of Mysore submitting the reports of the Committee on the inspection of the institutions with copy of a dissenting note by the Dir. of I. + C., and stating that the reports of the Committee and the note may be sent to the Education Deptt. for suitable action, and proposing that the same Committee may be permitted to inspect the institutions again in January or February next after the buildings of the Mechanical Engineering School are completed and after the new Supt. of the Mysore Technical

G.R.S. 27]

GENERAL AND REVENUE SECRETARIAT.

(*Continuation sheet draft form.*)

Institute has had some experience of the work of the Institute

Order No 4622-5.

Govt. have perused the report of the Committee and the note of Mr. Chatterton with great interest and are satisfied that work has been carried on in both the institutions with a fair degree of success according to the prescribed scheme. The Director of Industries has drawn attention to various drawbacks which should receive attention.

2. The present committee is requested to inspect the institutions again in the month of March 1916. and to submit a further report in the matter by the end of April 1916.

3 Copies of the reports now submitted by the Committee

and of the dissenting note by the Dir. of I. & C., are forwarded to the I.G. of Eon. for necessary action. They may be printed and kept on record for future reference.

JS G.G.D. 18.11.15

Draft as altered by Govt. Member
Ks 20/1

Secy. EXA
20/1.16

To the I.G. of Eon.
" Chf. Engr.
" Dr. of I. & C.
" Doco & Carriage Insp.
of Mysore State Railways.

JS H.V.K (18.4.16).

Issue
22/2/16

Rd. 13-3-16.

GPB—20,000—16-2-14

40

— Telegraphic Address —
STATEWORKS.

DIARY No. 3989

No. 13

MYSORE PUBLIC WORKS DEPARTMENT,
CENTRAL OFFICE,

Bangalore, 13—4—1916.

From

RAJASABHABHUSHANA
KARPUR SHRINIVASARAO, ESQ., B.SC., L.C.E., M.R.A.S.,
Chief Engineer of Mysore,
BANGALORE.

To

Pet.Geo.D'Souza, Esq: B.A., B.L.,
Secretary to the Government of Mysore,
Departments, of Education and Agriculture,
Bangalore.

Sir,

With reference to para 2 of Government Order No.4622-5/Edn. 19-15-56 dated the 13th March 1916, directing that the Committee referred to therein should inspect the Chamarajendra Technical Institute at Mysore and the Mechanical Engineering School at Bangalore in March 1916, and to submit a further report by the end of this month, I have the honor to inform you that, as Mr.Alderton, Superintendent of the Chamarajendra Technical Institute, Mysore, has brought to notice that the Institute is closed for the summer vacation from the 8th April to 8th May, the meeting has therefore to be postponed to the next month, and accordingly the report on the working of the two Institutions referred to, will be sent at the end of

of that month.

I have the honor to be,

S i r,

Your most obedient servant,

Chief Engineer of Mysore.

1360

42

GPB—3,210—1-6-15

Edn. 15]

OFFICE OF INSPECTOR-GENERAL OF EDUCATION IN MYSORE.

No. 20190 / 835

Bangalore, 7th April 1916

DIARY No. 3950

10-12

19-15

From

Rao Bahadur
M. SHAMA RAO, ESQ., M.A.,
Inspector-General of Education in Mysore.

To

P. G. D'SOUZA, ESQ., B.A., B.L.,
Secretary to the Government of H. H. the Maharaja of Mysore,
Education and Agriculture *Departments.*

SIR,

With reference to Government Proceedings No.4622-5/Edn.19-15-56 dated the 13th ultimo passing orders on the report of the Special Committee appointed to inspect the Chamarajendra Technical Institute, Mysore and the Mechanical Engineering School, Bangalore, I have the honour to request you to be so good as to send the following papers for reference as they are not found with the file now sent:-

1. The Committee's Inspection Report on the Chamarajendra Technical Institute, Mysore.

2. Enclosures referring to the list of inside and outside lectures and subjects of the Mechanical Engineering School, Bangalore.

The favour of an early reply is requested.

I have the honour to be,
Sir,
Your most obedient servant,

M. Shama Rao.

INSPECTOR GENERAL

TNR.

43

Sus.

G. R. S. 26]

Edn File No. 19-15

Serial No.

Diary No. of letter replied to .....

No. 7407.

General and Revenue Secretariat
( )
, the 191 .

To The Chf. Engr.

Sir,

Date of issue 21-6-16.

Signed by Sri K. Subba Rao.

I am directed to invite your attention to your letter no C. 13 & 13.4.16 stating that the report on the working of the Chem. Tech. Inst., Mysore, and the Mech. Eng. School, Bangalore, would be sent by the end of May 1916, and to request that the submission of the report may be kindly expedited.

Thanks etc

Forsecy. Edn.

SUBJECT.

44

TELEGRAPHIC ADDRESS: Statewoks.

No. 6378

MYSORE P. W. DEPARTMENT.

CENTRAL OFFICE,

Bangalore, 30th June 1916.

From Rajasabhabhushana

KARPUR SHRINIVASRAO, ESQ., B.Sc., L.C.E.,

Chief Engineer of Mysore,

Bangalore.

DIARY No. 78

10-10

To

P.G.D'Souza, Esq., B.A., B.L.,

Offg. Secretary to the Government of

His Highness the Maharaja of Mysore,

Departments of Education, Agriculture,

Industries and Commerce.

Sir,

With reference to your letter No. 7407/Edn. 19-15 dated the 21st June 1916, requesting that the submission of the report on the working of the Mechanical Engineering School, Bangalore and the Chamarajendra Technical Institute, Mysore, may be expedited, I have the honour to inform you that the two institutions were inspected by the Committee on the 2nd and 16th June 1916 respectively and the reports will be submitted shortly on receipt of certain information called for from Mysore.

I have the honour to be,

Sir,

Your most obedient servant,

R V Sundaramma

For Chief Engineer of Mysore.

S.S.

45

G. R. S. 26] 10/8

Edn File No. 19-15

Serial No.

Diary No. of letter replied to 75

No. 1341.

General and Revenue Secretariat
( )
, *the* 191 .

Date of issue 12-8-16.

Signed by Sri. K. Subba Rao

To The chf. Engr.

Sir,

I am directed to invite your attention to your letter no. 6378 of 30.6.16 and to request you to be so good as to state when the report on the inspection of the Chem. Tech. Inst., Mysore, and the Mech. Eng. School, Bangalore, may be expected.

I have etc.

KS 9/8

for Secy. Ex A

over.

SUBJECT.

.1149

46

TELEGRAPHIC ADDRESS : *Statowoks.*

No. 8875 — MYSORE P. W. DEPARTMENT.

CENTRAL OFFICE,

Bangalore 25th August 1916.

GEN. & REV. SECTION VI 28 AUG 1916

From Rajasabhabhushana
KARPUR SHRINIVASRAO, ESQ., B.SC., L.C.E., M.R.A.S.,
Chief Engineer of Mysore,
Bangalore.

To
P.G.D'Souza, Esq., B.A., B.L.,
Offg. Secretary to the Government of
His Highness the Maharaja of Mysore,
Departments of Education & Agricultur

Sir,

With reference to your letter No.1341/Edn.19-15 dated 12th instant, I have the honor to state that the Institution were duly inspected by the Committee but the report of inspection has been somewhat delayed for the due consideration of certain remarks made by Mr.Chatterton.

2. The inspection notes will be submitted to Government shortly.

I have the honor to be,
S i r,
Your most obedient servant,
Karpur Srinivasrao
Chief Engineer of Mysore.

47

G.R.S. 28]

Fair draft

File No. 19-15
Serial No. 107

Diary No. of letter replied to

Proceedings of the Government of His Highness the Maharaja of Mysore

GENERAL AND REVENUE SECRETARIAT.
( )

, the 191 .

READ—

GO no. 4622-5 / Edn. 19-15-56 of 13. 3. 16 reviewing the report of the Committee appointed to inspect the Chamarajendra Technical Institute at Mysore and the Mechanical Engineering School at Bangalore, and directing a second inspection of the institutions in March

over.

Date of issue 14-12-1916

Signed Dr. P. Mahadevayya

May this be

i printed?

ii treated as a standing order?

iii published in the Gazette English part?

iv translated?

v placed at the disposal of the Press?

vi published in the Gazette Kannada part?

~~ORDER THEREON.~~ No.

SUBJECT.

GPB—50,000—1-12-12

1916 and calling for a report of the inspection before the end of April 1916.

2. Correspce. ending with letter no. 9146 & 30. 8. 16 from The Secy. to Govt. in the Dept. of Public Works forwarding reports of inspection of the C.T. Institute at Mysore and the M.E. School at Bangalore.

Here print the letter and enclosures in extenso.

Order

No. 4622-6 D

The report regarding the work of the C.T. Institute is meagre. The appt. of a Demonstrator for drafting designs and a Hindustani teacher for imparting general education to the Mahomedan boys is under the consideration of Govt.

2. The report on the M.E. School is fuller and the work turned out by the institution is ~~highly~~ satisfactory.

G.R.S. 27]

GENERAL AND REVENUE SECRETARIAT.

(*Continuation sheet draft form.*)

3. The recommendations of the Committee to institute two grades of instruction and to provide training for higher grade of mechanical draftsmen in the latter institution are approved. Govt. agree with the Committee in their view that it is desirable to make arrangements ~~for~~ to enable the students to appear for the City and Guilds Exam^n. of London.

4. The proposals of the D.G. of Edn. regarding the improvements suggested by the Committee, and the abolition of the present system of having outside lecturers and equipping the machine shop to meet the growing demands of the M.E. School are awaited. They should be submitted before the 15th ~~[illegible]~~ [illegible]

Vy 30/10/16 Lect. Ex A 5/11/1

11.12.16

To the D.G. of Edn.
" Chf. Engr.
" Dr. of I & C.
" Loco & Carriage Supt. of the M.S. Rly. & Tramways
" Lect. Econ. Cont^e.

1/12

50

Government of His Highness the Maharaja of Mysore.

GENERAL AND REVENUE DEPARTMENTS.

G. O. No. 4622-6—Edn. 19-15-107, dated 14th Dec. 1916.

Technical Institutions.

Reviews the report on the —— at Bangalore and Mysore, submitted by a Special Committee appointed for the purpose.

W D 1658—GPB—11-1-17—255

No. 4622-6—Edn. 19-15-107, dated 14th December 1916.

PROCEEDINGS OF THE GOVERNMENT OF HIS HIGHNESS THE MAHARAJA OF MYSORE.

GENERAL AND REVENUE DEPARTMENTS.

Read—

Government Order No. 4622-5—Edn. 19-15-56, dated 13th March 1916, reviewing the report of the Committee appointed to inspect the Chamarajendra Technical Institute at Mysore and the Mechanical Engineering School at Bangalore, and directing a second inspection of the institutions in March 1916, and calling for a report of the inspection before the end of April 1916.

2. Correspondence ending with letter No. 9146*, dated 30th August 1916, from the Secretary to Government in the Department of Public Works, forwarding reports of inspection of the Chamarajendra Technical Institute at Mysore and the Mechanical Engineering School at Bangalore.

Printed as an accompaniment.

Order No. 4622-6—Edn. 19-15-107, dated 14th December 1916.

The report regarding the work of the Chamarajendra Technical Institute is meagre. The appointment of a Demonstrator for drafting designs and a Hindustani teacher for imparting general education to the Mahomedan boys is under the consideration of Government.

2. The report on the Mechanical Engineering School is fuller and the work turned out by the institution is satisfactory.

3. The recommendations of the Committee to institute two grades of instruction and to provide training for higher grade of Mechanical Draftsmen in the latter institution are approved. Government agree with the Committee in the view that it is desirable to make arrangements to enable the students to appear for the City and Guilds Examination of London.

4. The proposals of the Inspector-General of Education regarding the improvements suggested by the Committee and the abolition of the present system of having outside lecturers and equipping the Machine shop to meet the growing demands of the Mechanical Engineering School are awaited. They should be submitted before the 15th of January 1917.

P. G. D'SOUZA,
Secy. to Govt., Depts. of Edn. & Agri.

To—The Inspector-General of Education in Mysore.
The Chief Engineer of Mysore.
The Director of Industries and Commerce in Mysore.
The Loco and Carriage Superintendent of the Mysore State Railways and Tramways.
The Secretary, Economic Conference.

Exd.— C. R.

No. 4622-6—Edn. 19-15-107, dated 14th December 1916.

ACCOMPANIMENT.

Letter No. 9146, dated Bangalore, 30th August 1916, from Rajasabhabhushana Karpur Shrinivasrao, Esq., B. Sc., L.C.E., M.R.A.S., Secretary to the Government of Mysore, Public Works Department, to P. G. D'Souza, Esq., B.A., B.L., Offg. Secretary to Government, Departments of Education and Agriculture, Bangalore.

In continuation of my letter No. 8875, dated the 23rd August 1916, I have the honor to forward herewith the reports of the Committee on—

(i) the Chamarajendra Technical Institute at Mysore, and (ii) the Mechanical Engineering School at Bangalore.

Mr. R. E. Bury was not present when the first named institution was inspected and Mr. Chatterton was absent when the second one was visited.

2. The delay in the submission of the reports was due to certain correspondence which had to be carried on with Mr. Chatterton on account of his dissenting note of last year. He has stated that he has nothing to add to this year's report.

Committee's report on the inspection of the Chamarajendra Technical Institute, Mysore.

Rao Bahadur M. Shama Row, Esq. M.A.,
A. Chatterton, Esq., C.I.E.
Karpur Shrinivasrao, Esq., B.SC., L. C. E.
R. E. Bury, Esq. (Absent)

In accordance with Government Order No. 3424-27—Edn. 17-14; dated the 15th March 1916, the Chamarajendra Technical Institute, Mysore, was inspected for a second time on Friday the 16th June by a Committee consisting of the marginally noted officers and the question of improvement and wants of the institute was discussed. The work of the students was examined and the students themselves verbally tested about their work.

2. The Institute consists of four sections (*a*) Industries, Crafts and Arts Section, (*b*) Engineering Section, (*c*) Commercial Section and (*d*) Workshop Section. In the Art and Industries and Craft Section, the Institute provides practical instruction on the following arts:—

1. Cabinet making.
2. Smithy and Fitters.
3. Rattan work.
4. Metal work.
5. Wood carving.
6. Inlaying.
7. Engraving.
8. Painting.
9. Design and decorative art.
10. Modelling.

Besides these, there are classes for imparting instruction in general education and drawing to each of which the students have to devote an hour a day.

3. There are in all 199 students undergoing training in the several branches of this section as given below:—

Cabinet making	55
Smithy and Fitters	26
Rattan	27
Engraving	10
Inlaying	9
Wood carving	8
Metal work	10
Arts	36
Workshop apprentices	18
Total ...	199

There are 137 scholarship-holders and the amount of scholarship permitted to be utilised for the current year is Rs. 598 out of the budget grant of Rs. 1,180 per mensem.

Of the total number of 199 students, 41 are Brahmins, 1 Vaisya, 6 Rajputs, 105 other high caste Hindus, 9 Christians and 37 Mahomedans.

4. Since last inspection, the number of students has increased and as was suggested in the last report, the Institute has been placed under the management of Mr. Harold G. Alderton recently appointed from England.

5. The teaching in the school under the various branches is carried on as per syllabus approved by the Committee. Proposals are under consideration for revising the syllabus.

No. 4622-6—Edn. 19-15-107, dated 14th December 1916.

6. The following matters in regard to building, repairs, etc., are urgently requiring attention:—

The Superintendent brought to notice certain minor works for the improvement of the building and this question will be dealt with by the Public Works Department.

The Superintendent of the Institute has brought to notice the appointment of a Demonstrator for drafting designs and a Hindustani teacher for imparting general education to the Mahomedan boys. These proposals deserve favourable consideration.

Mr. Chatterton again refers to certain special proposals for improving the school as per his dissenting note of last year and these notes are attached for ready reference.

Committee's report on the inspection of the Mechanical Engineering School at Bangalore.

Rao Bahadur M. Shama Row, Esq., M. A.
R. E. Bury, Esq.
Karpur Shrinivasrao, Esq., B.Sc. L.C.E.

Agreeably to Government Order No. 3424-27—Edn. 17-14, dated 15th March 1915, the Mechanical Engineering School in Bangalore was inspected for a second time on Tuesday the 6th June 1916, by a Committee consisting of the marginally noted officers and the work done in the school during the past years, both in theory and practice and current work as well, was shown to the Committee by the Superintendent Mr. S. V. Setti and his Assistants.

2. *Subjects taught.*—The Institute provides instruction, as in the past, both in theory and practice, in the following subjects:—

(1) Management and care of steam and oil engines.

(2) Management and care of erection of machinery and mill work.

(3) Electrical work including operating.

(4) Care and driving of motor cars.

(5) Carpentry and cabinet making.

Besides these, there is the special class for training teachers for Industrial Schools. The other special classes, *viz.*, Permanent Way Inspectors' class is closed since there is no more demand for them and the Telegraph Signallers' class, which trained and sent out two batches of students, was transferred to the Traffic Department of the State Railway, as per Government Order No. 3043-5—Edn. 19-15-37, dated 4th January 1916.

2. *Present Strength of the Institution.*—There are at present in all 126 students undergoing training, as per accompanying tabular Statement A.

There are 55 scholarship-holders, 5 subsistance allowance holders, 47 free students and 19 paying students.

4. The number of students is greater in the Electrical Engineering Section (30) and least in carpentry and cabinet making section (5). Sixteen students of the I. S. T. class are now in their second year course, which will be completed next August when they can be usefully employed in the various Industrial Schools to be opened by the Government, and the Inspector-General of Education expressed that he is in need of them.

5. *Growing Demand for Technical Education.*—Since last inspection, in spite of the abolition of P. W. I. and T. T. classes, the number has increased to 126 as against 120 of last year when other classes were being held. It is therefore necessary to increase the staff suitably. The new extension to the main building, Smith's Shed and Motor Shed will be able to meet, when completed, the present demand for increased accommodation.

6. *Staff.*—The teaching in the school under the various branches is carried on, as usual as per syllabus approved by the School Committee. It is now undergoing a thorough revision in the light of past experience.

7. As usual, practical training predominates under each branch, while the necessary theoretical side, which is so very essential to secure success, has not been neglected.

8. *Necessity for two Grades of Technical Education.*—Though a low standard of general educational qualification is fixed for admission to the school, *viz.*, Lower Secondary, students of various standard of education, ranging from III Form to Intermediate class, are now studying. It has therefore been found difficult to interest some among this heterogenous combination in the general subjects which they have already studied in the High School classes and equally difficult to take the rest through the prescribed course, within the limited period. It is proposed to divide them into two grades, lower and higher, the subject syllabus of which is carefully drawn up by the School Committee (*vide* Appendix B).

Note.—The difficulty raised by Mr. Chatterton during last year's inspection by the present Committee that teaching partly theoretical subjects like Physics and Chemistry will serve no useful purpose, now disappears in the newly proposed improved courses under two grades to suit pupils of different standards of general education.

9. The new scheme does not in any way shut out the lower standard students, while the higher standard students will get better and higher form of technical training commensurate with their qualifications and ambition. It is recommended that these two grades of classes may be approved by Government.

10. *Work turned out in the various Shops.*—The work turned out by the students in the various classes was carefully examined.

(1) In the machine shop one third year student has nearly completed a six-cylinder radial type model steam engine, while another third year student is making horizontal type of steam engine which is also nearing completion. A few of the second year students were doing the different graded exercises on the lathes. The equipment in the machine shop is quite inadequate as compared with the number of students who have to get their training and the time at their disposal. The School Committee has recommended the purchase of certain machinery which the Government may very well sanction to the great advantage of the school.

(2) In the Fitters' Section the first year students were doing try-squares, scribing blocks.

(3) In the Carpenters' Shop, while a few were doing the advanced graded exercises, the others were making neat high stools fit for drawing class.

(4) In the Smithy, exercises in drawing out, making nails, welding were being done by the several students, while some of the students were working at the collapsible gate which is nearing completion.

(5) In the Foundry, a number of moulds, which had been got ready during the last few days, were all lined up and molten metal from the new emergency cupola was poured to several of them while a few were working at fresh moulds getting ready for casting next week or so.

(6) In the Motor Section, the students were busy in overhauling a Regal car, while some were being taken out for driving practice in Scott motor cycle combination and Calthorpe minor car.

(7) The Museum contains a set of graded exercises done by the past students in the various shapes, and in the class rooms a few reversible desks also done by the students were being used.

The above reflects great credit on the staff of the institution and the methods of carefully selecting suitable graded exercises and putting students in the way of how best to do them.

11. There are some casual students attending the institution, taking up short courses to pick up the knowledge they want and some of them appear to be smart and attentive to their work. One of them is Honours Graduate who has joined the institution with a view to get an insight into workshop work before going abroad.

12. *Practical Training.*—All the students of last year who successfully completed their second year course are now undergoing practical training in Messrs. Binny Mills, Maharaja Mills, Government Central Workshops, and the Electrical Department.

13. *Practical Training in the Railway Department.*—With regard to some of the present second year students who have to be sent for practical training, the question of offering prospects in the Railway Department was considered, and Appendix C shows the proposals made in consultation with the Chief Engineer for Railways so that there should be no difficulty to find employment for a few of the good successful students.

14. *Need for more Permanent Men on the Teaching Staff.*—The teaching staff consists of Mr. Setti helped by outside lecturers, three Assistants and six Artisans. Three years' experience has shown that some of the outside lecturers have not found it convenient to do the teaching work regularly and systematically owing to urgent calls in their own sphere of activity. This to a certain extent dislocates work. It is therefore desirable to increase the permanent staff and reduce the number of outside lecturers to minimise inconvenience (*vide* Appendix D).

15. *Marks and other Registers.*—Various Marks' Registers maintained were examined and the system of watching the progress of students at various stages of workshop practice by suitable records is very good, while the other registers have been maintained as usual.

The Visitors' Book maintained gives only their names and designation, but it is desirable to have another book to record opinions of distinguished visitors of technical or other repute.

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16. *Recommendations of the Committee.*—After a careful study of the conditions prevailing for the last three years, the following recommendations are submitted for favourable consideration and early action :—

(1) The new scheme for giving two grades of instructions, higher and lower, prepared by the School Committee be approved with suitable provision for admitting successful lower grade students, reducing or omitting the period of training in certain subjects which they will have already done.

(2) A scheme for training higher grade of Mechanical Draftsmen (*vide* Appendix E. for subject syllabus) may be incorporated in the above scheme. In fixing the curriculum the Railway Chief Engineer has also been consulted.

(3) In view of the fact that the present School has to be gradually raised to the standard of a high class Technical Institute, it is desirable to introduce in the institution only subjects pertaining to Mechanical, Electrical and Railway Engineering, leaving the training of Civil Engineers to the several Colleges already existing outside the State where there is at present no difficulty to gain admission.

Higher Civil Engineering subjects may also be introduced eventually, when a separate Civil Engineering College is to be established in the State or made an adjunct to the present institution.

(4) Staff necessary in addition to the existing members mentioned in para 14 are :—

(i) One L. M. E. to replace the General Assistant who only teaches now Physics, Chemistry and other high school subjects and whose services will not be required under the new scheme.

(ii) One Mechanical Engineering B.A., B.E., of the rank of the Sub-Assistant Engineer may be lent from the Public Works Department, if possible.

(iii) One Artisan on Rs. 40—4—60.

(5) If higher technical classes are to be opened as stated in (2) three more Graduates with sufficient experience on works in Menchanical, Electrical and Railway Engineering respectively are necessary.

(6) It is found desirable to make arrangements, so that the students may appear for the City and Guilds Examination of London just as Commercial students go in for London Chamber of Commerce Examinations. It is desirable in the interests of the School to send every year a few students for practical training to factories outside the State with a stipend of Rs. 15 per month.

(7) The proposal sent up by the School Committee for equipping the institution with different types of prime-movers and electric generators is very good, as they are necessary to give the requisite training and confidence in handling different types of plant and may be sanctioned.

17. *Conclusion.*—On the whole, the Committee are pleased to record their opinion that the work of the institution is being conducted on sound and practical lines and that the School Committee and the staff are carefully studying the wants from time to time and submitting suitable proposals for sanction, with a view to enhance the reputation and status of the institution, and they therefore can strongly recommend the adoption of the various measures proposed in this report in para 16.

APPENDIX A.

	Steam and oil engine				Machinery and mill work				Electrical Engineering including operating				Care and driving of motor vehicles				Carpentry and Cabinet making				Industrial School Teachers' class				Casual students varying from 3 to 12 months				Total			
	Scholarship-holders	Ordinary	Paying	Total	Scholarship-holders	Ordinary	Paying	Total	Scholarship-holders	Ordinary	Paying	Total	Scholarship-holders	Ordinary	Paying	Total	Scholarship-holders	Ordinary	Paying	Total	Scholarship-holders	Ordinary	Paying	Total	Scholarship-holders	Ordinary	Paying	Total	Scholarship-holders	Ordinary	Paying	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
First year ...	5	2	1	8	4	2	...	6	8	5	2	15	2	2	...	4	1	1	...	2	...	...	...	...	...	...	14	14	20	12	17	49
Second year ...	7	1	1	9	7	2	1	10	2	4	...	6	3	...	...	3	1	2	...	3	...	16	...	16	...	...	...	...	20	25	2	47
Third year ...	8	3	...	11	9	1	...	10	3	6	...	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	* 20	10	...	30
Fourth year ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	20	6	2	28	20	5	1	26	13	15	2	30	5	2	...	7	2	3	...	5	...	16	...	16	...	...	14	14	60	47	19	126

* Stipends would be paid to the students of the Branches I and III while they undergo practical training outside Bangalore. Five students are being paid at present.

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APPENDIX B.

HOLIDAYS, etc.

Month	General Holidays	Sundays	Partial Holidays	Total	Remarks
1	2	3	4	5	6
January	2	3	4	9	
February	0	4	5	6½	
March	1	4	5	7½	
April	2	5	7	10½	
May	0	4	5	6½	
June	2	4	4	8	
July	0	5	6	8	
August	1	4	5	7½	
September	3	4	6	10	
October	14	5	4	21	
November	1	4	4	7	
December	8	5	5	15½	
Total ...	34	53	30	117	

Summer	21 days—4½ days=16½ days.	
New Moon	13 × ½	6½ do
	Total ...	23 do
Durbar Day	1	
Total	141	

365—141=224 working days or 1,500 hours per year, deducting about 68 hours for class examinations and contingencies.

PROBABLE TIME TABLE.

Students whose standard of education is not higher than the V Form and not lower than the III Form will have to work as follows:—

Every day ... ... { 1 hour for class work. 6 hours for workshop.

Saturdays ... ... { 1 hour for class work. 3 hours for workshop.

so that out of 39 hours, 6 hours are devoted to class work and 33 hours for workshop. Therefore out of 1,500 hours in a year

240 hours for class work; and
1,260 hours for workshop practice.

For 2½ years 600 hours for class work; and
3,150 hours for workshop practice.

Students who will have completed Secondary School-Leaving Certificate or passed in the examination will have to work as follows:—

Morning alternate days ... ... Class work and workshop.
Every day afternoon ... ... Workshop.

This gives 12 hours class work and 27 hours workshop work, so that in a year 480 hours for class work and 1,020 hours for workshop. Or, in 2½ years 1,200 hours for class work and 2,550 hours for workshop.

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LOWER GRADE CLASS WORK.

Details of Study:—

(I. Steam and oil engines.)

1. Drawing	350 hours	600 hours
2. Mensuration and Estimating	40 „	
3. Materials of Construction	30 „	
4. Steam and Oil Engines	60 „	
5. Pumps and Pumping Machinery	40 „	
6. Workshop Practice ... } 7. Machine Tools ... } 8. Millwright's Work ... }	80 „	

(2) Electrical Engineering.

1. Drawing	290 hours	600 hours
2. Mensuration and Estimating	40 „	
3. Materials of Construction	30 „	
4. Elements of Electricity and Magnetism ...	80 „	
5. Electric Wiring	80 „	
6. Workshop Practice ... } 7. Machine Tools ... } 8. Millwright's Work ... }	80 „	

(3) Care and Driving of Motor Vehicles: (Two years).

1. Drawing	130 hours	480 hours
2. Mensuration and Estimating	40 „	
3. Materials of Construction	30 „	
4. Petrol Engines ... } 5. Different types of vehicles ... }	200 „	
6. Workshop Practice ... } 7. Machine Tools ... } 8. Millwright's Work ... }	80 „	

WORKSHOP PRACTICE.

Lower Grade.

Details of Study:—

(Branches I and II.)

First year	Fitting	630 hours
	Carpentry	630 „
	Foundry	630 „
Second year	Smithy	630 „
Third year	Machine shop	630 „

(Branch III.)

First year	Fitting	630 hours
	Carpentry	315 „
	Smithy	315 „
Second year	Machine shop	630 „
	Overhauling and Driving ...	630 „

Details of Study:— Higher Grade. Class Work.

I. Mechanical Engineering:—

1. Drawing and Designing	520 hours	1,200 hours
2. Applied Mechanics	80 „	
3. Heat, Electricity and Magnetism	40 „	
4. Trigonometry and Mensuration	80 „	
5. Steam and Internal Combustion Engines ...	80 „	
6. Hydraulics and Hydraulic Machinery ...	40 „	
7. Materials of Construction	40 „	
8. Machine Tools and Workshop Practice ...	80 „	
9. Laboratory Work	200 „	
10. Estimating	40 „	

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II. ELECTRICAL ENGINEERING.

Lower Grade.

1.	Drawing and Designing	440 hours	1,200 hours
2.	Applied Mechanics	80 „	
3.	Heat, Electricity and Magnetism	80 „	
4.	Trigonometry and Mensuration	80 „	
5.	Steam and Internal Combustion Engines	40 „	
6.	Hydraulics and Hydraulic Machinery	40 „	
7.	Materials of Construction	40 „	
8.	Dynamo Electric Machinery	80 „	
9.	Laboratory Work	200 „	
10.	Estimating	40 „	
11.	Machine Tools and Workshop Practice	80 „	

Details of Study.	Higher Grade.	Workshop Practice.
Branches I and II:—		
Fitting Shop		510 hours
Carpenter's Shop		510 „
Machine Shop		510 „
Foundry Shop		510 „
Smithy Shop		510 „

Note.—(1) Order in which workshop practice to be given will be according to the convenience at the time.

(2) No radical alterations are proposed either in the staff or equipment.

(3) One extra hand for the workshop portion is necessary whose pay shall be the same as for some of the instructors already proposed, *vide*, my letter No. 270, dated the 16th [illegible]

APPENDIX C.

I. Drivers:—	
(1) 2nd Fireman	15—10—25
(2) 1st	
(3) Relief man	30
(4) 3rd class Driver	40
(5) 2nd „ „	50
(6) 1st „ „	60—5—90
(7) Loco Foreman	80—5—125
II. Train Examiners:—	
(1) 1st year probationer	15
(2) „ „	20
(3) 3rd „ „	30
(4) On confirmation	30—5—35
(5) Assistant Train Examiner	35—5—60
(6) District Inspector	75—5—100
III. Electrical Chargemen and Vacuum brake Inspectors:—	
(1) One year probation	25
(2) On confirmation	30—5—60
IV. Permanent Way Inspectors:—	
(1) One year probation after leaving school	25
(2) After confirmation	40—5—100
V. Miscellaneous:—	
(1) Boiler smith	30—5—40
(2) Boiler maker	60

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APPENDIX D.

Mr. S. V. Setti, B.A., F.H., A.M.I.E.E., Superintendent.

Staff	Workshop Section
1. Mr. R. Ramachandra Rao, L.M.E., L.E.E., Senior Technical Assistant. 2. Mr. S. B. Krishna Murthi Rao, B.A., General Assistant 3. Mr. A. N. Ranganathan, L.M.E., Junior Technical Assistant. Theory Section (outside Lecturers) paid at the rate of Rs. 10 per lecture. 1. Mr. K. Srinivasa Iyengar, A.M.I.M.E. (Machinery and Mill Work). 2. Mr. M. Padmanabha Rao, L.E.E., (Electric Laboratory Practice). 3. Mr. Y. S. Kesava Rao, L.C.E., (Materials of Construction. 4. Mr. B. Krishna Rao, B.A., A.C.E. (Hydraulics). 5. Mr. N. D. Venkatesaiya (Carpentry). 6. Mr. K. Srinivasaraghavachar, B.A., L.T., (Book-keeping).	1. Mr. B. Venkataramiah, Machineshop Instructor. 2. B. Boriah, Carpenter Instructor, 3. B. Chinnappa Mudaliar, Motor Mechanic. 4. C. Ramaswami Mudaliar, Fitter Instructor. 5. B. S. Hanumanthu, Workshop Instructor. 6. B. Munisami Naidu, Blacksmithy Instructor. 7. B. Jeevaji Rao, Moulder Instructor.

Special Lecturers:—

1. Mr. A. Chatterton, B.Sc., F.C.G.I., C.I.E., (Pumping Machinery).
2. Mr. V. Rangaswami Iyengar, A.C.E., B.C.E., (Iron and its treatment).

Establishment:—

1. H. R. Krishna Murthi, Clerk. R. Seeniah Setti, Tool-keeper.

APPENDIX E.

Draftmen's Class (Higher Grade).

No.	Number of lessons	Subject Syllabus
1	200	Higher Mathematics, mensuration and use of logarithms and slide rule.
2	80	Graphic Status.
3	100	Applied mechanics, strength and testing of materials of construction.
4	40	Heat Engines.
5	50	Hydraulics and hydraulic machinery.
6	80	Machine tools and workshop practice.
7	80	Electrical machinery.
8	100	Costing and estimating of quantities.
9	100	Composition and specification writing.
10	80	Tracing and taking out prints.
11	700	Sketching, machine design and drawing.
	1610	*Workshop Training.*

	Hours
Fitters' shop	430
Carpenters	430
Machine	430
Foundry	430
Smithy	430
Total ...	2,150

Total period of training 2½ years in the school and one year on works.